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ABSTRACT

A study was conducted to test four hypotheses concerning modification of student self-concept in communication courses: (1) different kinds of training affect student self-concept in different ways, (2) scale bias affects measurement of student self-concept, (3) male and female self-concepts change differently, and (4) course grade affects student self-concept. Four different instruments were administered among subjects drawn from communication, freshman English, psychology, and biology courses. Of the four sections of each course sampled, two sections responded to two scales--one measuring general self-concept and the other measuring self-concept as a communicator. The remaining two sections responded to two different instruments measuring the same variables. Instruments were administered during the first and last two weeks of the semester. The results indicated an increase of scores over the semester for communication and English subjects and a decrease in scores for psychology and biology subjects, supporting the first hypothesis. The results showed that the instruments measuring general self-concept were not highly related to the instruments measuring the dimension self-concept of communication ability, supporting the second hypothesis. The results did not support either the third or fourth hypotheses. (HTH)

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Student Self-concept Modification in Communication Courses: An Exploration of the Sources of Conflicting Findings

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Student Self-concept Modification in Communication Courses: An Exploration of the Sources of Conflicting Findings

A commonly expressed goal of communication educators is to provide students with an opportunity for individual growth (e.g., Brooks, 1978, pp. 4-5; Judd and Smith, 1977, p. 289; Giffin and Patton, 1971, p. viii, and Weirich, 1970, p. 66). A way of achieving this growth is self-concept enhancement. In discussing self-concept enhancement the relationship of self-concept and personality is considered. Byrne (1974) described self-concept (how a person perceives and evaluates himself) as one of the varied kinds of personality dimensions (i.e. authoritarianism, intelligence, manifest anxiety, need for achievement, etc.), and suggested that to persons studying personality holding to the conviction that man should be dealt with as an organized whole rather than in terms of his atomistic units (i.e. authoritarianism, need for achievement), the notion of self-concept emerges as useful. He concluded that self-concept is an important aspect of personality (p. 271).

Many educators have recognized the relationship of self-concept and personality. For example, Rogers (1951) proposed a theory of personality development, personality functioning, and personality change with the concept of self as its central

focus. Ferullo (1963) suggested that self-concept and personality patterns are strongly related, and Sullivan (1964) suggested that the personality is, in part, a self-system. Brooks (1978) used the terms self-concept and personality synonomously, suggesting that "to understand one's self, one must observe that there are several facets to one's personality, several different selves" (p. 47).

Speech and self-concept or personality are believed to be intergrally related. Sapir (1927) suggested that speech communication is intuitively interpreted by normal human beings as an index of personality expression. Murray (1937) suggested that speech and personality grow, develop, differentiate, and become refined together; speech being a phase of personality (p. 8). Gilkinson and Knower (1941) stressed that "although teachers differ in regard to their treatment of personality problems in speech, few would minimize the causative importance of emotional attitudes in determining a speaker's effectiveness" (pp. 161-162). They suggested that "the speaker's rapport with his audience and, therefore, his general effectiveness are determined in large measure by both his attitudes toward his audience and his self-attitudes. Moreover, his overt mannerisms, including such characteristics as vocal quality, rate of speech, posture, diction, fluency, etc., are regarded as symptoms of degrees of internal emotional organization or disorganization" (p. 161). More recently, Brooks (1978) stressed that personal

and social growth are two of the major objectives of the study of communication because communication and personality are refined together (p. 5). The goal of facilitating personal and social growth among communication students is, contemporarily, discussed as student self-concept modification in speech communication courses (Judd and Smith, 1977, p. 289).

A number of studies have been conducted to ascertain if students' self-concepts are modified in communication courses. Collectively, the results of the studies are contradictory. For example, Miyamoto, Crowell and Katcher (1956) found that self-conceptions reflect a fairly stable phenomenon, and that we should not expect great changes in this variable due to contact with any single academic course. Brooks and Platz (1968) found that some students' self-concepts as communicators improved, while other students' self-concepts as communicators were weakened as a result of contact with a basic speech course. Furr (1970) found that students' self-concepts were improved as a result of contact with a course in business speaking. Perhaps the most warranted conclusion that emerges from the varied findings is that some self-concept change apparently takes place in some students in communication courses (Judd and Smith, 1977, p. 289; citing Judd, 1973). Before teachers of speech communication can claim that speech instruction serves to stimulate individual growth through self-concept enhancement the sources of the inconsistencies in the previous research findings must be identified. This paper is an initial attempt at doing so. The nature of student

self-concept modification in communication courses (SSCMCC) literature is discussed, and four hypotheses that emerge from a review of the literature are presented and tested. A discussion of the implications of the results for future research then follows.

SSCMCC Literature

Hansford and Hattie (1982) in analyzing literature on "self" suggested that in some areas of educational research the number of studies completed and the contradictory nature of research findings make the traditional review of literature a difficult and imprecise task (p. 123). They utilized a meta-analysis approach for making comparisons between studies, by reducing the findings of disparate studies to a common or comparable value, and relating this common value to various independent variables identified in the particular research area (p. 123). SSCMCC literature requires a similar approach. Area literature is identified and examined in terms of what theoretical support exists for SSCMCC and how area researchers have considered self-constructs. Hypotheses that emerge from a review of the literature, that are concerned with independent variables common to SSCMCC research are presented with the intention of clarifying the sources of inconsistencies in previous SSCMCC findings.

A computerized literature search was conducted to gain an indication of the available data base regarding the relationship between self-constructs (i.e. self-concept, ideal self-concept, self-concept as a communicator, self-confidence, self-perception, self-esteem, personality, personality development, psychological

change) and speech instruction (i.e. speech instruction, public speaking, speech communication, fundamentals of speech). The search focused on three major data bases (Educational Resources Information Center [ERIC], Comprehensive Dissertation Abstracts, and Psychological Abstracts). Primary attention was directed to research articles directly pertaining to SSCMCC, published in academic journals on national or regional levels. The computer search was supplemented by a manual search involving the Education Index and the Index to Journals in Communication Studies Through 1979. The search indicated that only twelve articles directly associated with SSCMCC research were published between 1935 and 1982 (Moore, 1935; Knower, 1938; Rose, 1940; Gilkinson, 1941; Pasco and Lillywhite, 1951; Miyamoto, Crowell and Katcher, 1956; McCroskey, 1967; Brooks and Platz, 1968; Furr, 1970; Brooks and Jandt, 1971; Judd and Smith, 1974; Judd and Smith, 1977). In other words, since 1935, only an average of one SSCMCC article has appeared roughly every four years. Considering the potential impact of self-concept on communication ability the small number of SSCMCC articles does not indicate that the heuristic potential of this area has been realized.

The notion that student self-concept modification is potentially stimulated through experience in a basic speech course has theoretical support. First, common to literature on "self" is the belief that the self-concept is developed through one's reaction to evaluations communicated by others during interpersonal interactions. Cooley (1902) stressed, for example, that the self develops out of one's perceptions of the reactions of others to him. In other words,

people are what they perceive other people think them to be. Mead (1934) added that "selves can only exist in definite relationships to other selves. Our own selves exist and enter as such into our experience only insofar as the selves of others exist and enter as such into our experience" (p. 164). Mead added the concept of the "generalized other." He stressed that through interpersonal interaction people develop a conception of the attitudes of other people toward them and that this conception, the attitude of the generalized other, serves to unify their selves. Sullivan (1947) suggested that the self may be said to make up of reflected appraisals, where individual selves are comprised largely of personal symbolic elements learned in contact with other significant people (pp. 10-21). Finally, Rogers (1951) defined the self-concept as "being composed of the percepts and concepts of the self in relationship to others" (p. 136). Considering the highly socially interactive atmosphere of most basic speech courses (speaker-audience interaction, group discussion, instructor or peer feedback), the communication classroom environment seems capable of potentially stimulating student self-concept modification.

Of additional concern is whether college age adults are susceptible to self-concept modification. Again, the literature on "self" seems clear. Byrne (1974) suggested that "while the earliest and presumably most general aspects of the self-concept develop in interactions between the child and parental figures, continuing changes in the self-concept should take place as a consequence of later interactions" (p. 292). Felker (1974) added that the self-concept is influenced by

the experiences which an individual has every day (p. 6). Furr (1970) suggested that the perception of environmental elements in new perspective also tends to alter the self-concept (p. 26). Finally, Purkey (1970) suggested that "because the self is developed as a process of experience, it is remarkably plastic, changeable, and possesses infinite capacity for growth and actualization" (p. 30).

The concern of communication educators is to improve students' communicative effectiveness. This is a behavioral concern. For student self-concept modification to warrant status as a topic relevant to speech instruction, self-concept must be shown to have impact on communication behavior. The literature on "self" concretely supports this notion. Mead suggested, for example, that the "attitude of the generalized other" controls a person's behavior. Lecky (1945) added that people behave in ways that are consistent with their self-views. Rogers (1951) believed behavior to be a function of the individual's "self" perceptions, and emphasized that the behavioral scientist should attempt to achieve an internal (self) rather than an external frame of reference. Finally, Felker (1974) suggested that self-concept determines how an individual will behave in a wide range of situations (p. 7).

There is a small base of research findings supporting that self-concept and communication behavior are related. Gilkinson and Knower (1941), for example, reported that good speakers have better social adjustment than have poorer speakers (p. 166). Bormann and Shapiro (1962) reported that a speaker's perceived confidence is a function of his self-image (p. 256). Finally, Ferullo's (1963)

findings indicated that better speakers reveal a significantly higher degree of self-satisfaction, self-acceptance, independence, emotional control and personality integration than do poorer speakers (p. 85).

Despite the support of the literature on "self" that student self-concept modification is potentially stimulated through experience in a basic speech course and that this phenomenon should be a relevant concern of communication educators, SSCMCC findings are contradictory, possibly because in SSCMCC literature self-concept has been considered in a variety of ways. There is, for example, disagreement among researchers about the application of self-theory. Ferullo (1963) suggested that self-theory appears to be a useful framework for research concerning personality patterns (p. 85). Judd (1973) contrarily, suggested that self-theory is theoretically distinct from the commonly measured traits of personality, but did not elaborate his position (p. 49). Moreover, there is a lack of uniformity in the study of the dependent variable "change in self-concept" in the SSCMCC literature. Such constructs are studied as: self-concept (Furr, 1970; Judd and Smith, 1974, Judd and Smith, 1977), self-concept as a communicator (Miyamoto, Crowell, and Katcher, 1956; Brooks and Platz, 1968; Brooks and Jandt, 1971), ideal self-concept (Judd and Smith, 1974; Judd and Smith, 1977), personality change (Moore, 1935; Rose, 1940), personality development (Pasco and Lillywhite, 1951), and self-confidence (McCroskey, 1967). Considering the diverse nature of SSCMMC research, a common ground must be identified. A review of the literature yielded such identification in the form of four hypotheses, each concerned with a different

independent variable, that, when tested, provide insight into the sources of the previous contradictory SSCMCC findings.

I.
Hypotheses

A.
Different Kinds of Training Affect Student Self-concept in Different Ways

The hypothesis that different kinds of training affect student self-concept in different ways is grounded in SSCMCC literature. Moore (1935), for example, found that students enrolled in speech courses experienced a significant increase in self-sufficiency and dominance and a significant reduction in introversion and neurotic trends, while students not enrolled in speech courses (Moore did not specify what courses the non-speech students were enrolled in) did not experience significant changes in these traits (pp. 57-59). Additionally, Rose (1940), found that basic speech students experienced a greater increase in dominance and a greater decrease in neurotic tendency than non-speech students (p. 195). (Rose also did not specify what courses the non-speech students were enrolled in.) Miyamoto et al. (1956) found that both speech students and psychology students increased scores between testing times but on different items. Speech students increased their scores particularly on items referring to confidence in speaking before others, ability to persuade others, and ability to express themselves in a clear

and well-organized manner. On the other hand, psychology students reflected an increase of self-conception with regard to their ability to express their ideas with clarity (pp. 71, 73). Brooks and Platz (1968) found that for three-fourths of their experimental group (speech students) there was a significant improvement in self-concept as a communicator, while for the remaining one-fourth of the experimental group there was deterioration in self-concept. Moreover, the control group (randomly selected non-speech students) suffered a significant deterioration in self-concept as a communicator. They concluded that concept of self as a communicator deteriorates as a result of general college experience. Additionally, they concluded that one of the major implications of their study was that the basic speech course affects students in different ways (pp. 46-49). Finally, Furr (1970) found that persons receiving training in business speaking made significantly greater gains in various aspects of self-concept than persons not receiving such training (students enrolled in psychology and physical education classes). There was, however, a positive, although not statistically significant, shift in self-concept among all three participating groups, and in virtually all categories represented in the measuring instruments used. Furr speculated that such factors as maturation, campus environment, and social and cognitive stimulation could have prompted the positive self-perceptive shift. (pp. 29-30).

The preceding findings show that there are data suggesting that the hypothesis that different kinds of training affect student self-concept in different ways has merit. There is speculation, however, that the basic speech course affects students in different ways, and additional speculation that such factors as maturation, campus environment, and social and cognitive stimulation might account for student self-concept change. Is it possible to isolate speech instruction as a cause of student self-concept change? For this question to be answered two things must be demonstrated: first, that speech training has such impact on student development, and, second, that this impact is distinct from experience in other types of courses, or the speculation that a substantial influencer of student self-concept change is simply general college related experiences will gain even greater credibility.

B.
Scale Bias Affects Measurement of Student Self-concept

Self-concept has historically been characterized in a variety of ways. The diversity of explanations of self-concept is sufficient to create an impression that is a moderately amorphous entity. Indeed, Ames (1975) stressed that the many different and inconsistent ways self-concept has been characterized has been a major problem with self-concept theory and research (p. 314). For example, self-concept has been characterized as:

> ...a "dynamism" (Sullivan, 1953, p. 167), both the "knower" and the "Known" (James, 1910), the "looking-glass self" (Cooley, 1902), an organization of values that are consistent with one another (Lecky, 1945, p. 160), an organized, fluid but consistent pattern of perceptions of characteristics and relationships of the "I" or the "me," together with values attached to these concepts (Rogers, 1951, p. 498), all those regions of our life that are peculiarly ours, such as sense of continuity, ego-enhancement, ego extension, synthesis of inner needs with outer reality, and self-image (Allport, 1955).

Coppersmith (1967) concluded that the self-concept is inclusive of diverse and numerous extensions, and stressed that one particular dimension or group of dimensions of self-concept could be studied in addition to the globular self-concept (p. 21). The following descriptive statements about self-concept illustrate the multi-dimensional view of the construct:

> ...an organization of values (Lecky, 1945, p. 160), an organized pattern of perceptions (Rogers, 1951, p. 498), a set of propositions (Ames, 1975, p. 317), a complex and dynamic system of beliefs (Purkey, 1970, p. 7), a system of personal constructs (Kelly, 1955), a unique set of perceptions, ideas and attitudes (Felker, 1974, p. 2), made up of many facets (McCandless, 1967, p. 258), a complex of several segments (Brookover, 1964, p. 271), a many-faceted and multiple-layered constellation of ideas (Purkey, p. 7).

Considering the diverse ways in which self-concept has been characterized, the question arises as to whether it is conceptually sound to categorize certain studies as self-concept research. A problem might exist because of the diversity of instruments being used to measure the hard to characterize "common dependent variable" in SSCMCC literature.

Among the twelve studies published between 1935 and 1982 directly associated with SSCMCC, numerous instruments were used to measure the dependent variable "self-concept" (e.g., Moore used the Bernreuter Personality Inventory; Knower used the Speech Attitude Scale, Speech Experience Inventory, Speech Convention Scale, Speech Problem Survey Scale and Case History Questionnaire; Rose used the Bernreuter Personality Inventory; Gilkinson used the Speech Attitude Scale and the Minnesota Inventory of Social Behavior; Pasco and Lillywhite used the California Test of Personality and the Johnson Temperament Analysis; Miyamoto et al. developed a Self-concept as Communicator Scale; McCroskey used a semantic differential for the concept, "My Speaking Ability"; Brooks and Platz used a Q-sort instrument incorporating Miyamoto et al. scale items; Furr used the Tennessee Self-concept Scale and the Guilford-Zimmerman Temperament Survey; Brooks and Jandt used the Miyamoto et al. Self-concept as Communicator Scale; Judd and Smith (1974, 1977) used semantic differential scales originally developed by Dieker, Crane, and Brown). Additionally, the literature reviews of several SSCMCC articles (i.e. Brooks and Platz, Furr, Brooks and Jandt, Judd and Smith [1974]) included references to the findings of other studies using different instruments without recognizing this situation for its potential to separate the studies as being dissimilar. Judd (1973) suggested that:

> For most teachers of speech communication the interest in self-concept stems from its possible relationship to communication behavior and effectiveness. Yet, with little exception, the measuring instruments used in the SSCMCC literature were developed in the contexts of psychological therapy or personality trait theory. The instruments are so diverse in nature that there is reason to doubt that they are measuring the same variable (p. 51).

He concluded that "communication researchers should develop from the broad area of self-theory measures of self-concept which are most relevant to communication" (p. 51). The hypothesis that scale bias affects measurement of student self-concept seems to be as much a truism as an hypothesis. The fact remains, however, that the impact of scales on measurement of student self-concept has not been reflected as an intentional concern in SSCMCC research designs.

C.

Male and Female Self-concepts Change Differently

The hypothesis that male and female self-concepts change differently is advanced in several SSCMCC studies. Miyamoto et al. found that male and female self-concept changes are not identical. The scale used in this study was found to be more discriminating for males than for females, but on the most discriminating items the females maintained a higher average of self-concept than did the males (p. 70). Brooks and Platz found that men and women did not differ in self-concept as a communicator either before or after taking the basic speech course, and they did not differ in their concepts of the ideal communicator before the course, but they did have different ideal communicator concepts after the basic speech course was completed (p. 49). Judd and Smith (1974) found that at moderate discrepancy levels, both males and females demonstrated a tendency to increase in self-concept, with females increasing the most (p. 220). In a later study, Judd and Smith (1977) found that sex accounted for a significant portion of the variance in the final self-concept and ideal

self-concept scores of their subjects (pp. 296-297). SSCMCC findings support that the impact of sex should be considered in future SSCMCC research.

D.
Course Grade Affects Student Self-concept

The hypothesis that course grade affects student self-concept has moderate direct and indirect support in SSCMCC literature. In the most recent SSCMCC article, Judd and Smith (1977) found that course grade accounted for a significant portion of the variance of self-concept scores of students (pp. 293-297). Brooks and Jandt found that students who received positive reinforcement or reward from their instructors experienced favorable self-concept change (pp. 223-224). Additionally, Bormann and Shapiro (1962) found that indirect suggestions to speakers that they appeared confident increased their perceived confidence as speakers (pp. 255-256). Grades can be regarded as a form of positive reinforcement or reward and an indirect suggestion that a student possesses communicative skill. There is, therefore, some direct and indirect support for the hypothesis that course grade affects student self-concept.

II.
Methodology

A.
Subjects

Students enrolled in four sections of a fundamentals of communication course, four sections of a freshman English course, four sections of an introductory psychology course, and four sections of an introductory

biology course were used as subjects in this study. A student who was enrolled in more than one of the classes from which subjects were being drawn was excluded from participation in the study. Freshman English students were used because of the possible influence that student self-expression, emitted through the preparation of course assignments (e.g., essays), might have on self-concept change. Introductory psychology students were used because of the potential affect that awareness of concepts covered in the course (e.g., self-fulfilling prophecy, self disclosure) might have on self-concept change. Introductory biology students were used as a control group on the assumption that there is less interaction in this course setting than in the other course settings and that the course content and course experiences do not pertain directly or indirectly to the topic of self-concept.

B.
Measurement of Self-concept and Self-concept as a Communicator

Four different instruments were administered among the subjects drawn from the four different courses (communication, freshman English, introductory psychology and introductory biology). Of the four sections of each course sampled two sections responded to two scales, one measuring general self-concept (GSC_1) and the other measuring self-concept as a communicator ($SCAC_1$). The remaining two sections responded to two other scales, also with one measuring general self-concept (GSC_2) and the other measuring self-concept as a communicator ($SCAC_2$).

The Tennessee Self-concept Scale (TSCS) and the Pervin and Lilly Self-concept Semantic Differential (SCSD) were used to

measure general self-concept (GSC_1 and GSC_2, respectively). Wylie (1974) described the TSCS as one of the more frequently used self-regard instruments (p. 230). Furr (1970) explained the selection of this scale for his study on the basis of the utility of the scale; the TSCS is an instrument that provides fifteen categories into which self-concept is divided, as well as a Total Positive Score which represents a synthesis or total self-concept (p. 27). Fitts (1965) reported that test-retest reliability coefficients of the Total Positive Score for 60 college students over a two-week period was .92, with the test-retest reliability of various subscores ranging between .70 and .90. Bentler (1972) reported the retest reliability for the TSCS, while varying for different scores, was in the high .80's, sufficient to warrant confidence in individual difference measurement (p. 366). The SCSD was easy to administer and included several dimensions of self-concept. Pervin and Lilly (1967) claimed face and construct validity for the instrument (pp. 845-853).

Hochel's Index of Self-concept as a Communicator (ISCC) and a revised version of Gilkinson's Personal Report of Confidence as a Speaker (PRCS) were used to measure self-concept as a communicator ($SCAC_1$ and $SCAC_2$, respectively). Hochel (1973), unable to find an instrument that assessed students' images of their communication abilities in specific structures (e.g., public speaking: dyadic) and elements (e.g., language usage: listening), designed the ISCC (p. 4). The ISCC was easy to administer to a large group. Hochel found test-retest reliability coefficients supportive of the reliability of the instrument and claimed content validity,

criterion-related validity, and construct validity for the instrument (pp. 48-59). The PRCS is one of the better known scales relating to self-concept of communication ability (i.e. Gilkinson, 1942, pp. 141-160; Clevenger, 1959, p. 135; Bormann and Shapiro, 1962, pp. 253-256). The revised version of this scale used by Young (1972) was selected for this study because it was easy to administer and included the dimensions of speech anxiety and exhibitionism. The instrument was revised by Young because factor analytic research indicated that the PRCS was not unidimensional (pp. 13-14). Based on Friedrich's (1970) factor analytic work with the PRCS and Bush, Bittner, and Brooks' (1972) continued analysis and revision of the instrument, Young further revised the instrument to provide "the most valid and reliable introspective measure of speaker confidence available (p. 20)."

The instruments used in this study were administered to the subjects during the first and last two weeks of a college semester during regularly scheduled class meetings, always over entire class periods. The researcher or a graduate assistant administered the instruments. Instructions were given both verbally and attached as a cover sheet for each instrument in all sections. Because all subjects responded to two instruments order control was used, where the students of each section were divided into two evenly sized groups and the instruments were administered in reverse order in the groups. To control and assess individual teacher impact, the students of one section per teacher were sampled and a teacher evaluation item was included on the posttest. Information pertaining to subject age and educational classification (freshman, sophomore, etc.), sex, and the grade that each subject expected to receive were secured on both pretests and posttests.

C.
Data Analysis and Results

As the study is concerned with several hypotheses data analyses and results are presented in sections. Sections one and two focus on data analyses and results pertaining to hypotheses one and two, respectively. Hypotheses three and four were tested in the same data analysis, and, therefore, the data analysis and results for these hypotheses are reported together in section three.

I. Different Kinds of Training Affect Student Self-concept in Different Ways.

Testing of the hypothesis that different kinds of training affect student self-concept in different ways involved four (one analysis for each instrument) 4 x 2 (four courses by two trials) analyses of variance, and t-tests, computed to show the level of significance of difference between pretest and posttest means of subjects' scores from each individual course.

Results:

A) GSC_1

A significant interaction between courses and trials was found for GSC_1 with an F value of 4.76 and PR>F equal to .0062. A test for significance of difference between the pretest and posttest means of subjects' scores from the individual courses was thus warranted. The results of the t-tests which are presented in Table 1 indicate that although a dichotomus relationship existed

Table 1

Comparison of All Mean Scores for Instruments and Courses .

	GSC_1				GSC_2				$SCAC_1$				$SCAC_2$			
	Pretest Mean	Posttest Mean	t value	Change Direction	Pretest Mean	Posttest Mean	t Value	Change Direction	Pretest Mean	Posttest Mean	t Value	Change Direction	Pretest Mean	Posttest Mean	t Value	Change Direction
Communication N = 22	261.772	264.318	1.66	+	9.409	11.00	1.65	+	26.81	33.59	1.69	+	.40909	3.0454	1.34	+
English N = 22	261.954	265.727	2.50*	+	10.95	12.59	1.76	+	29.22	28.90	-0.09	-	.40909	2.3181	1.68	+
Psychology N = 22	265.772	264.409	-0.79	-	10.81	12.36	1.67	+	28.36	25.59	-0.68	-	.0000	1.3636	0.93	+
Biology N = 22	271.813	267.727	-3.52**	-	11.31	16.50	4.037***	+	38.27	32.36	-1.89	-	-3.0909	-3.4545	-0.22	-

*Significant at .05
**Significant at .01
***Significant at .001

between two pairs of courses (with subjects from Communication and English showing improvement and subjects from Psychology and Biology showing a decrease) the t values for only English and Biology means were significant.

B) GSC_2

No significant interaction between courses and trials was found for GSC_2 with an F value of 2.57 and PR> F equal to .0679. This finding was, however, roughly close to being significant at the .05 level. The results of the t-tests which are presented in Table 1 indicate that although subjects from all four courses showed improvement only the t value for Biology means was significant.

C) $SCAC_1$

No significant interaction between courses and trials was found for $SCAC_1$ with an F value of 2.08 and PR> F equal to .1188.

D) $SCAC_2$

No significant interaction between courses and trials was found for $SCAC_2$ with an F value of .79 and PR> F equal to .5081.

II. Scale Bias Affects Measurement of Student Self-concept.

Testing of the hypothesis that scale bias affects measurement of student self-concept involved computing correlation coefficients for GSC_1 and $SCAC_1$; and GSC_2 and $SCAC_2$.

Results:

A) GSC_1 and $SCAC_1$

The correlation coefficients for GSC_1 change and $SCAC_1$ change; GSC_1 Pre and $SCAC_1$ Pre; and GSC_1 Post and $SCAC_1$ Post which are presented in Table 2 show that the scales are not highly related in any regard.

B) GSC_2 and $SCAC_2$

The correlation coefficients for GSC_2 change and $SCAC_2$ change; GSC_2 Pre and $SCAC_2$ Pre; and GSC_2 Post and $SCAC_2$ Post which are presented in Table 3 show that the scales are not highly related in any regard.

III. Male and Female Self-concepts Change differently; Course Grade Affects Student Self-concept.

Testing of the hypotheses that male and female self-concepts change differently, and that course grade affects student self-concept involved 4 stepwise multiple linear regression analyses (one analysis for each test) using a backward elimination procedure for the dependent variable self-concept change. Stepwise multiple linear regression allows one to study the linear relationship between a set of independent (predictor) variables and, in this case, the dependent (criterion) variable self-concept change. The backward elimination procedure computed how much of the variance in self-concept change was explained (predicted) by a combination of all independent variables considered, and then dropped the single weakest predictor variable which, in turn, showed how much of the variance in self-concept change was explained by a combination of all independent variables but the one dropped. The dropping process was continued by eliminating the second weakest independent variable, and so on.

Table 2

GSC_1 and $SCAC_1$

Correlation Coefficients
Prob 1R1

	GSC Change	SCAC Change	GSC Pre	GSC Post	SCAC Pre	SCAC Post
GSC Change	1.00000 0.00000	0.30011 0.0045	-0.45484 0.0001	0.28852 0.0064	-0.05898 0.5851	0.11114 0.3026
SCAC Change	0.30011 0.0045	1.00000 0.0000	-0.16502 0.1244	0.05593 0.6047	-0.15210 0.1572	0.41131 0.0001
GSC Pre	-0.45484 0.0001	-0.16502 0.1244	1.00000 0.0000	0.72146 0.0001	0.00069 0.9949	-0.09038 0.4023
GSC Post	0.28852 0.0064	0.05593 0.6047	0.72146 0.0001	1.00000 0.0000	-0.04512 0.6764	-0.01076 0.9207
SCAC Pre	-0.05898 0.5851	-0.15210 0.1572	0.00069 0.9949	-0.04512 0.6764	1.0000 0.0000	0.83833 0.0001
SCAC Post	0.11114 0.3026	0.41131 0.0001	-0.09038 0.4023	-0.01076 0.9207	0.83833 0.0001	1.00000 0.0000

N = 88 Numerator: Correlation Coefficient.
Denominator: Probability that the correlation could happen by chance alone.

Table 3

GSC_2 and $SCAC_2$

Correlation Coefficients
Prob 1R1

	GSC Change	SCAC Change	GSC Pre	GSC Post	SCAC Pre	SCAC Post
GSC Change	1.00000 0.0000	0.14620 0.1741	-0.30984 0.0033	0.57540 0.0001	0.01219 0.9103	0.09534 0.3769
SCAC Change	0.14620 0.1741	1.00000 0.0000	-0.16993 0.1135	-0.02309 0.8309	-0.24192 0.0232	0.38112 0.0002
GSC Pre	-0.30984 0.0033	-0.16993 0.1135	1.00000 0.0000	0.59934 0.0001	0.23873 0.0251	0.10888 0.3126
GSC Post	0.57540 0.0001	-0.02309 0.8309	0.59934 0.0001	1.00000 0.0000	0.21562 0.0436	0.17393 0.1051
SCAC Pre	0.01219 0.9103	-0.24192 0.0232	0.23873 0.0251	0.21562 0.0436	1.00000 0.0000	0.80008 0.0001
SCAC Post	0.09534 0.3769	0.38112 0.0002	0.10888 0.3126	0.17393 0.1051	0.80008 0.0001	1.00000 0.0000

N = 88 Numerator: Correlation Coefficient.
Denominator: Probability that the correlation could happen by chance alone.

In addition to sex and grade the following independent variables were considered: course, section, age, educational classification (freshman, sophomore, etc.), and evaluation of teacher. The additional independent variables were considered to allow the researcher to be as precise as possible in identifying predictors of self-concept change. Grade was measured in terms of subject expectation. Each subject was asked to indicate on both the pretest and the posttest what course grade he expected to receive. Based upon responses the subjects' expectations fell into one of three categories: decreased expectation, constant expectation, or increased expectation. The evaluation of the teacher was accomplished by having each subject respond to a posttest item (Overall, this teacher is among the best teachers I have ever known) by selecting one of five responses ranging from strongly agree to strongly disagree.

The results of the regression analyses which are presented in Tables 4, 5, 6, and 7 include the squares of the correlation coefficients (R^2). The R^2, also referred to as the coefficient of determination, is the proportion of criterion variance that is accounted for by the predictor variables. The results indicate that all of the independent variables considered accounted for only a small portion of the criterion variance for all four instruments.

III.
Discussion

Results are discussed as they pertain to each hypothesis, as are conclusions emerging from these results.

Table 4

GSC_1

Backward Elimination Procedure for
Dependent Variable Self-concept Change

Predictor Variables	R^2	F	Prob F
1. All variables entered: course, section, sex, age, educational classification, grade expectation, teacher evaluation.	0.10708244	1.37	0.2286
2. Section variable removed.	0.10699470	1.62	0.1529
3. Age variable removed.	0.10688564	1.96	0.0921
4. Grade expectation variable removed.	0.10652967	2.47	0.0506
5. Sex variable removed.	0.09777841	3.03	0.0332
6. Teacher evaluation variable removed.	0.07963410	3.68	0.0294
7. Educational classification variable removed.	0.06623692	6.10	0.0155

Table 5

GSC_2

Backward Elimination Procedure for Dependent Variable Self-concept Change

Predictor Variables	R^2	F	Prob F
1. All variables entered: course, section, sex, age, educational classification, grade expectation, teacher evaluation.	0.10221932	1.30	0.2600
2. Section variable removed.	0.10153062	1.53	0.1803
3. Age variable removed.	0.09474472	1.72	0.1390
4. Sex variable removed.	0.08673931	1.97	0.1065
5. Course variable removed.	0.07001514	2.11	0.1038
6. Educational classification variable removed.	0.05458379	2.45	0.0920
7. Grade expectation variable removed.	0.03360672	2.99	0.0873

Table 6

$SCAC_1$

Backward Elimination Procedure for Dependent Variable Self-concept Change

Predictor Variables	R^2	F	Prob F
1. All variables entered: course, section, sex, age, educational classification, grade expectation, teacher evaluation.	0.10708244	1.37	0.2286
2. Section variable removed.	0.10699470	1.62	0.1529
3. Age variable removed.	0.10688564	1.96	0.0921
4. Grade expectation variable removed.	0.10652967	2.47	0.0506
5. Sex variable removed.	0.09777841	3.03	0.0332
6. Teacher evaluation variable removed.	0.07963410	3.68	0.0294
7. Educational classification variable removed.	0.06623692	6.10	0.0155

Table 7

$SCAC_2$

Backward Elimination Procedure for
Dependent Variable Self-concept Change

Predictor Variables	R^2	F	Prob F
1. All variables entered: course, section, sex, age, educational classification, grade expectation, teacher evaluation.	0.10221932	1.30	0.2600
2. Section variable removed.	0.10153062	1.53	0.1803
3. Age variable removed.	0.09474472	1.72	0.1390
4. Sex variable removed.	0.08673931	1.97	0.1065
5. Course variable removed.	0.07001514	2.11	0.1038
6. Educational classification variable removed.	0.05458379	2.45	0.0920
7. Grade expectation variable removed.	0.03360672	2.99	0.0873

A.
Different Kinds of Training Affect
Student Self-concept in Different Ways.

The results supported the hypothesis that different kinds of training affect student self-concept in different ways. For example, an interaction, significant at the .01 level of confidence, between courses and trials was found for GSC_1 ($F = 4.76$, $PR > F = .0062$). A dichotomous relationship between two pairs of courses was indicated with communication and English subjects' scores increased and psychology and biology subjects' scores decreased. Only English and biology subjects' scores changed significantly between pretest and posttest mean scores (English $t = 2.50$, significant at .05; biology $t = -3.52$, significant at .01). Of the four instruments administered, however, only GSC_1 scores produced a significant interaction between courses and trials. The interaction between courses and trials was almost significant at the .05 level for GSC_2 ($F = 2.57$ $PR > F = 0.0679$) with subjects' scores for all four courses increased, but only the scores of biology subjects increased significantly between pretest and posttest mean scores ($t = 4.037$, significant at .001).

The results showed that subjects' scores on two different instruments measuring the general self-concept construct did not change similarly from pretest to posttest, in either level or direction of change. This was dramatically demonstrated by biology subjects' scores which significantly decreased on GSC_1 but significantly increased on GSC_2. No significant interactions between courses

and trials were found for either $SCAC_1$ or $SCAC_2$. The comparison of subjects' pretest and posttest mean scores for all four instruments and courses, which is presented in Table 1, shows the inconsistency of results.

One explanation for the inconsistency of results is that the opposite effects of the independent variable (course) had cancelled each other. This occurred by some students having positive GSC or SCAC shifts while other students had negative GSC or SCAC shifts. The cancellation factor, which is partly indicated in Table 8, provides support for the hypothesis that different kinds of training affect student self-concept in different ways. The responses of subjects to each of the four instruments in each of the four courses produced some cancelling factor in virtually every case. Some subjects' change in GSC and SCAC scores from pretest to posttest was small and the effects of the independent variable were weak, but several subjects' GSC and SCAC scores from pretest to posttest increased dramatically, while, still other subjects' GSC and SCAC scores from pretest to posttest decreased dramatically, with the opposite scores cancelling each other out. The following three examples illustrate the impact of the cancellation factor on t values (which would also have impact on course-trials interaction findings). A t test for the difference between pretest and posttest mean scores of only the communication subjects with positive shffts on GSC_1 produced a t value of 5.02, significant at the .001 confidence level; while a t test for the difference between pretest and posttest

Table 8

Direction of Subjects' Change in GSC and SCAC Scores from Pretest to Posttest

	GSC_1			GSC_2			$SCAC_1$			$SCAC_2$		
	Increase	Constant	Decrease	Increase	Constant	Decrease	Increase	Constant	Decrease	Increase	Constant	Decrease
Communication N = 22	15	2	5	12	2	8	16	0	6	15	0	7
English N = 22	15	1	6	12	6	4	12	1	9	16	0	6
Psychology N = 22	12	1	9	13	1	8	11	0	11	13	0	9
Biology N = 22	4	2	16	17	0	5	8	1	13	9	1	12

mean scores of only the communication subjects with negative shifts on GSC_1 produced at t value of -2.99, significant at the .05 confidence level. A t test for the difference between pretest and posttest mean scores of only the biology subjects with positive shifts on $SCAC_1$ produced a t value of 2.78, significant at the .05 confidence level; while a t test for the difference between pretest and posttest mean scores of only the biology subjects with negative shifts on $SCAC_1$ produced a t value of -3.45, significant at the .01 confidence level. The most dramatic example of the opposite effects cancellation factor evident in the results involved the scores of psychology subjects on $SCAC_1$. The 22 subjects split evenly, with the scores of 11 subjects increased from pretest to posttest, while the scores of the other 11 subjects decreased from pretest to posttest. A t test for the difference between pretest and posttest mean scores of only the psychology subjects with positive shifts on $SCAC_1$ produced a t value of 3.48, significant at the .01 confidence level; while a t test for the difference between pretest and posttest mean scores of only the psychology subjects with negative shifts on $SCAC_1$ produced a t value of -4.30, significant at the .01 confidence level.

Brooks and Platz reported that the opposite effects cancellation factor was evident in their results and concluded that one of the major implications of their study was that the basic speech course affects students in different ways, and suggested that the

opposite effects finding may offer, in part, explanation of contradictory findings in earlier research reports (p. 49). They suggested that it may be that the subjects who made negative changes are a population different from those who made positive changes. Brooks and Platz speculated that if some communication subjects have severe problems in self-confidence and extreme fear of social situations, the public speaking course may have a detrimental effect, and concluded that perhaps not all subjects should be enrolled in the same basic course in speech. They suggested that for some time colleges and universities have been concerned with students at the top of the continuum, and that it may be that now we need to be concerned with students at the bottom of the continuum (p. 47). Considering the results of this study, the suggestion of Brooks and Platz may be applicable to a range of courses.

Brooks and Platz further speculated that the dependent self-concept as a communicator variable considered in their study could have deteriorated as a result of general college experience (p. 48). Furr suggested that such factors as maturation, campus environment, and social and cognitive stimulation could account for self-concept change as measured in particular course settings. He observed that subjects cannot be isolated from their usual environment throughout the duration of this type of study (p. 30). Additionally, Brooks and Jandt indicated that student self-concept change might be attributed to such factors as history and maturation (p. 224). Considering the diversity of results of this study across

all four courses and instruments it is difficult to conclude whether the change in the self-concept dependent variables was due to the impact of courses, or whether it was due simply to the stimulation of the general college environment. Perhaps instruments can be developed or revised with greater emphasis on criterion validity (accuracy of test score to predict some criterion variable--i.e. GSC_1 predicting performance in speech) to deal specifically with student capabilities along the continuum described by Brooks and Platz.

B.
Scale Bias Affects Measurement
of Student Self-concept.

The results supported the hypothesis that scale bias affects measurement of student self-concept. The correlation coefficients computed in this study provided a measure of relationship between GSC_1 and $SCAC_1$; and GSC_2 and $SCAC_2$. The results showed that the instruments measuring general self-concept were not highly related to the instruments measuring the dimension self-concept of communication ability. GSC_1 change correlated only 30% ($R = .30$) with $SCAC_1$ change. Thus, only 9% ($R^2 = .09$) of the variation in GSC_1 change could be explained by the variation in $SCAC_1$ change. GSC_2 change correlated only 14.6% ($R = .146$) with $SCAC_2$ change. Thus, only 2% ($R^2 = .02$) of the variation in GSC_2 change could be explained by the variation in $SCAC_2$ change. Considering these results, the conclusion that generalizations should not be made between findings of studies using instruments that measure different self-concept constructs, seems warranted.

The t values reported provided some indirect support for the conclusion that generalizations should not be made between findings of studies using different instruments that measure a similar self-concept construct (e.g., general self-concept). Although some conceptual similarity can be claimed between GSC_1 and GSC_2, for example, these instruments are inherently different. GSC_1 measures fifteen categories into which self-concept is divided (which encompasses three dimensions of five different constructs; identity, self-satisfaction, and behavior dimensions of: physical self, moral-ethical self, personal self, family self and social self) and provides a Total Positive Score. GSC_2 measures three factors of self-concept: evaluation, potency and activity. Individual items on GSC_1 such as "I am a calm and easy going person" can be classified in GSC_2 terms. "Calmness" would be an activity (excitement, warmth, quickness, agitation) factor on GSC_2. The instruments are, however, structured differently. GSC_1 presents 100 statements that subjects respond to on a five-item scale, with choices ranging between completely false and completely true. GSC_2 presents 13 pairs of contrasting terms (e.g., sociable-unsociable) that subjects respond to on a seven-item semantic differential scale.

The t values reported indicated indirectly that responses to GSC_1 did not predict responses to GSC_2 (it is important to stress that no correlation coefficients could be computed between GSC instruments or between SCAC instruments, therefore, only indirect

support for the hypothesis that scale bias affects measurement of student self-concept could be made when pertaining to the relationship between, in this case, GSC_1 and GSC_2 instruments, through the comparison of GSC_1 and GSC_2 t values). The scores of English subjects increased between pretests and posttests on both GSC_1 and GSC_2, however, the difference between the pretest and posttest means was found to be significant at the .05 level, with a t value of 2.50, on GSC_1; but was not found to be significant on GSC_2 with a t value of 1.76. Additionally, the scores of biology subjects decreased on GSC_1 between pretest and posttest, but increased on GSC_2 between pretest and posttest, with the difference between the pretest and posttest means significant at the .01 level, with a t value of -3.52 on GSC_1, while the difference between the pretest and posttest means was significant at the .001 level, with a t value of 4.037 on GSC_2. The apparent conclusion is that although some similarities do exist between GSC_1 and GSC_2, differences exist as well, and GSC_1 scores cannot be assumed to be capable of predicting GSC_2 scores.

Bentler (1972) indicated that several GSC_1 scores had remarkably high correlations with other measures of personality functioning (p. 366). For example, the Taylor Anxiety Scale correlated -.70 with Total Positive. Correlations from .50 to .70 were common with the Cornell Medical Index. He concluded that GSC_1 overlapped sufficiently with well-known other measures to consider it a possible alternative for those measures in various applied situations (p. 366). Although GSC_1 correlated highly with some other measures

of personality functioning, it cannot be assumed that it would correlate highly with all measures of personality functioning. The contention raised in this study is that similarity of scales and generalizability of findings cannot be assumed but must be demonstrated with high correlation coefficients, before any predictive relationship can be stated or implied. The direct evidence provided by the correlation coefficients and the indirect evidence provided by the t values reported in this study show that the correlation coefficients are a practical necessity when generalizations between findings of different instruments are being made.

An unfortunate limitation of the study involved logistics. Each subject could not respond to all four of the instruments. The faculty of the four courses measured were as responsive as possible within the parameters of what time obligations seemed manageable. Two full class periods, one at the beginning and one at the end of the semester during which the study took place was the maximum subject utilization time available. With this time constraint each subject was limited to responding to one repeated GSC measure and one repeated SCAC measure. Lack of the completion time necessary for subjects to respond to all four measures would have insured that (even with order control) a high potential for fatigue to have contaminated responses could have been expected if each student responded to all four instruments.

III. Male and Female Self-concepts Change Differently; Course Grade Affects Student Self-concept.

Contrary to the findings reported earlier that supported the hypotheses that male and female self-concepts change differently, and that course grade affects student self-concept, no support was found for either hypothesis in the results. The relationship between the predictor variables and the two dimensions of student self-concept change measured (GSC and SCAC) was consistent for the subjects responding to GSC_1 and $SCAC_1$; and for the subjects responding to GSC_2 and $SCAC_2$. Considering that the relationship between the predictor variables and criterion variables did not vary between the tests responded to by subjects of the same population, the conclusion that the relationship of the predictor variables to dimensions of student self-concept change is relatively constant, seems warranted.

IV.
Conclusions

The findings of this study indicated that future SSCMCC research might best be directed towards developing instruments emphasizing criterion validity. The assessment of how student self-concept scores predict student speech communication capabilities, leading to the development of self-concept enhancement strategies that build better communicators; rather than how experience in a basic speech course modifies student self-concept scores, may be the greater, if not more quantifiable concern. Additionally, the identification of a pool of highly correlated scales to be used in future SSCMCC research is a practical necessity if a true "area" of generalizable findings is to be developed.

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